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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/745,825	12/21/2000	Muhammad Chishti	AT-00097	4092
46718 7590 11/16/2007 TOWNSEND AND TOWNSEND AND CREW, LLP (018563) TWO EMBARCADERO CENTER, EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			EXAMINER NGUYEN, PHU K	
			ART UNIT 2628	PAPER NUMBER
			MAIL DATE 11/16/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/745,825	CHISHTI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Phu K. Nguyen	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
**PHU K. NGUYEN**  
**PRIMARY EXAMINER**  
**GROUP 2300**

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over ANDREIKO et al. (5,447,432).

As per claim 1, Andreiko teaches the claimed "computer-implemented method for reviewing tooth arrangements", said method comprising:

"maintaining a digital data set representing a three-dimensional graphical representation of a patient's teeth in a host computer" (Andreiko, the scanner 33; column 13, lines 52-68);

"electronically transmitting the digital data set to a viewing computer; displaying the three-dimensional graphical representation on the viewing computer to a treating clinician" (Andreiko, the computer 30; column 14, lines 19-24); and

"electronically transmitting data comprising the changes to the graphical

representation from the viewing computer to the host computer" (Andreiko, column 14, lines 36-53; the final position of the teeth).

It is noted that Andreiko does not explicitly teach "altering a rendered image by manipulating the image graphically so as to generate changes to the graphical representation." However, Andreiko's Analysis and Tooth Positioning Procedure (column 25, line 53 to column 29, line 22), which describes the procedure of moving the tooth from an initial position to its desired position (figures 3C and 6E), suggests the graphical manipulation of the scanned teeth as claimed. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a graphical manipulation to adjust the teeth image to a final position because Andreiko's interactive adjustment of the teeth (column 14, lines 19-24) aims to provide a graphical representation of teeth moving from its initial positions to its final positions.

Claim 2 adds into claim 1 "the digital data set represents the teeth in a reconfigured arrangement" (Andreiko, figures 3-4).

Claim 3 adds into claim 2 "the digital data set represents a final tooth configuration to be achieved by orthodontic treatment" (Andreiko, figure 6E).

Claim 4 adds into claim 3 "maintaining a second digital data set representing a three-dimensional graphical representation of the patient's teeth in an initial arrangement on the host computer, electronically transmitting the second digital data

set to the viewing computer, and displaying the three-dimensional graphical representation of the patient's teeth in the initial arrangement on the viewing computer to the treating clinician" (Andreeiko, column 13, line 52 to column 14, line 24).

Claim 5 adds into claim 4 "the graphical representations of the teeth in the final and initial configurations are displayed side-by-side on a display of the viewing computer" (Andreiko, figures 3C and 6E; the side-by-side display is just mere design choice for comparison).

Claim 6 adds into claim 1 "the digital data set represents a series of intermediate configurations from an initial tooth configuration to a final arrangement" (Andreiko, figures 4C-4B).

Claim 7 adds into claim 6 "the digital data set is displayed as an animated routine" which is just a mere design choice to view a plurality of frames of sequential images.

Claim 8 adds into claim 7 "the treating clinician manipulates the animation routine on the viewing computer to step forward or backward through images along a treatment path" which is just a mere design choice to view a plurality of frames of sequential images.

Claim 9 adds into claim 1 "the host computer is remote from the viewing computer" (Andreiko, column 13, lines 45-52).

Claim 10 adds into claim 9 "transmitting data between the host computer and the viewing computer is performed over a direct connection" (Andreiko, col. 13, lines 45-52).

Claim 11 adds into claim 9 "transmitting data between the host computer and the viewing computer is performed over the world wide web" which is just a mere design choice in view of Andreiko's transmission of data to a remote station.

Claim 12 adds into claim 1 "altering a three-dimensional image displayed on the viewing computer, wherein the altered image may be electronically transmitted to the host computer" which Andreiko does not explicitly teach. However, Andreiko's Analysis and Tooth Positioning Procedure (column 25, line 53 to column 29, line 22), which describes the procedure of moving the tooth from an initial position to its desired position (figures 3C and 6E), suggests the graphical manipulation of the 3D scanned teeth (figures 3-3B) as claimed. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a graphical manipulation to adjust the teeth image (figures 3-3B) to a final position because Andreiko's interactive adjustment of the teeth (column 14, lines 19-24) aims to provide a graphical representation of 3D teeth moving from its initial positions to its final positions.

Claim 13 adds into claim 12 "detecting tooth collisions resulting from the altered image and alerting the treating clinician" (Andreiko's Analysis and Tooth Positioning Procedure (Session 95 – Analysis and Finish Tooth Position Calculation Procedure, column 42).

Claim 14 adds into claim 1 "electronically transmitting comments comprises sending textual messages" (Andreiko, column 14, lines 41-53).

Claim 15 adds into claim 1 "revising the digital data set on the host computer to incorporate changes suggested by the treating clinician to produce a revised digital data set" (Andreiko, column 14, lines 36-40; updated patient's information).

Claim 16 adds into claim 15 "electronically transmitting the revised digital data set to the viewing computer, displaying a revised three- dimensional graphical representation on the viewing computer to the treating clinician, and electronically transmitting further changes to the graphical representation or comments of the treating clinician from the viewing computer to the host computer" (Andreiko, column 14, lines 25-40).

As per claim 17, Andreiko teaches the claimed "computer-implemented method

for reviewing tooth arrangements”, said method comprising:

” maintaining a digital data set representing a three-dimensional graphical representation of a patient's teeth in a host computer” (Andreiko, the scanner 33; column 13, lines 52-68);

”electronically transmitting the digital data set to a viewing computer, the viewing computer comprising instructions operable to cause the computer to display the three-dimensional graphical representation on the viewing computer” (Andreiko, the computer 30; column 14, lines 19-24); and

”receiving data comprising the changes to the graphical representation, the data electronically transmitted from the viewing computer to the host computer” (Andreiko, column 14, lines 36-53; the final position of the teeth).

It is noted that Andreiko does not explicitly teach “alter, at the direction of a human user, a rendered image by manipulating the image graphically so as to generate changes to the graphical representation.” However, Andreiko's Analysis and Tooth Positioning Procedure (column 25, line 53 to column 29, line 22), which describes the procedure of moving the tooth from an initial position to its desired position (figures 3C and 6E), suggests the graphical manipulation of the scanned teeth as claimed. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a graphical manipulation to adjust the teeth image to a final position because Andreiko's interactive adjustment of the teeth (column 14, lines 19-24) aims to provide a graphical representation of teeth moving from its initial positions to its final positions.



Due to new ground of the rejection, this action has been made NON-FINAL.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu K. Nguyen whose telephone number is (571) 272 7645. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (571) 272 7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Phu K. Nguyen  
November 5, 2007

  
PHU K. NGUYEN  
PRIMARY EXAMINER  
GROUP 2300